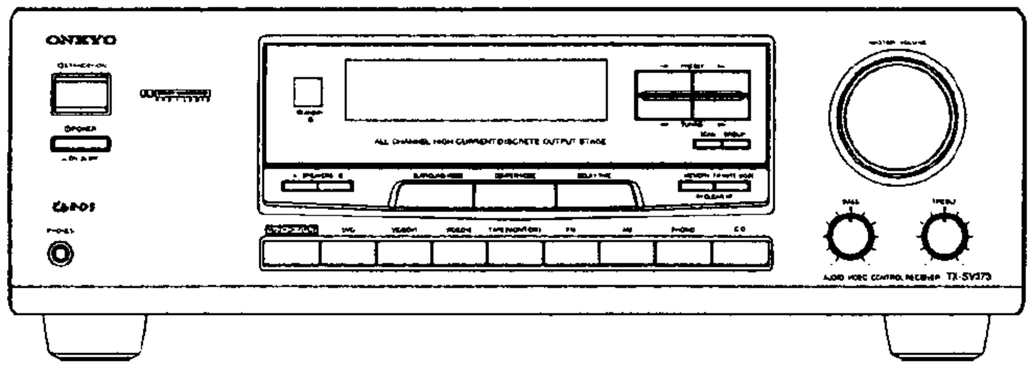
Ref. No.3616

ONKYO® SERVICE MANUAL

AUDIO VIDEO CONTROL
RECEIVER
MODEL TX-SV373



Black model

BMDN	120V AC, 60Hz
BMP,BMPT	230V AC, 50Hz
BMWT,BMWR	220-230V/120V AC, 50/60Hz

Black and Golden models

BMWT,BMWR,GMWT,GMWR	220-230V/120V AC, 50/60Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

ONKYO®
AUDIO COMPONENTS

SPECIFICATIONS

AMPLIFIER SECTION

Continuous Average Power output (FTC)

Front L/R channels:	**50 watts per channel min. RMS at 8 ohms, both channels driven from 20 Hz to 20 kHz with no more than 0.08% total harmonic distortion.**
Center channel:	**50 watts min. RMS at 8 ohms, driven from 20 Hz to 20 kHz with no more than 0.08% total harmonic distortion.**
Surround L/R channels:	**20 watts per channel min. RMS at 8 ohms, both channels driven from 20 Hz to 20 kHz with no more than 0.3% total harmonic distortion.**

Continuous Power output (DIN)	
Front L/R channels:	70 watts × 2 at 6 ohms
Center channel:	70 watts at 6 ohms
Surround L/R channels:	30 watts × 2 at 6 ohms
Maximum Power output (EIAJ)	
Front L/R channels:	90 watts × 2 at 6 ohms
Center channel:	90 watts at 6 ohms
Surround L/R channels:	40 watts × 2 at 6 ohms
Total Harmonic Distortion:	0.08% at rated power (Front)
IM Distortion:	0.08% at rated power (Front)
Damping Factor:	60 at 8 ohms (Front)
Sensitivity and Impedance	
Phono:	2.5 mV/50 kohms
CD, DVD, VIDEO-1, VIDEO-2, Multi-CH, Tape Play:	200 mV/50 kohms
Tape Rec:	200 mV/2.2 kohms
Subwoofer Pre out:	1 V/2.2 kohms
Phono Overload:	70 mV RMS at 1 kHz, 0.5% T.H.D.
Frequency Response:	20 Hz to 30 kHz, ±1 dB
RIAA Deviation:	20 Hz to 20 kHz, ±0.8 dB
Tone Control	
Bass:	±10 dB at 100 Hz
Treble:	±10 dB at 10 kHz
Signal-to-Noise Ratio	
Phono:	80 dB (IHF A, 5 mV input)
CD, DVD, VIDEO-1, VIDEO-2, Tape:	100 dB (IHF A)

VIDEO SECTION

Signal sensitivity and impedance:	1 Vp-p, 75 ohms (DVD/VIDEO-1/VIDEO-2 input, output)

TUNER SECTION

FM

Tuning Range:	87.50 ~ 108.00 MHz
Usable Sensitivity	
Mono:	11.2 dBf, 1.0 µV (75 ohms)
Stereo:	17.2 dBf, 2.0 µV (75 ohms)
50 dB Quieting Sensitivity	
Mono:	17.2 dBf, 2.0 µV (75 ohms)
Stereo:	37.2 dBf, 20.0 µV (75 ohms)
Capture Ratio:	1.5 dB
Image Rejection Ratio	
U.S.A. & Canadian models:	40 dB
Other area models:	85 dB
IF Rejection Ratio:	90 dB
Signal-to-Noise Ratio	
Mono:	76 dB
Stereo:	70 dB
Alternate Channel Attenuation:	55 dB
Selectivity:	50 dB (DIN)
AM Suppression Ratio:	50 dB
Total Harmonic Distortion	
Mono:	0.15%
Stereo:	0.25%
Frequency Response:	30 Hz ~ 15 kHz, ±1.5 dB
Stereo Separation:	45 dB at 1 kHz 30 dB at 100 Hz ~ 10 kHz

AM

Tuning Range	
U.S.A. & Canadian models:	530~1,710 kHz (10 kHz steps)
European models:	522~1,611 kHz (9 kHz steps)
Worldwide models:	531~1,602 kHz (9 kHz steps), 530~1,710 kHz (10 kHz steps)
Usable Sensitivity:	30 µV
Image Rejection Ratio:	40 dB
IF Rejection Ratio:	40 dB
Signal-to-Noise Ratio:	40 dB
Total Harmonic Distortion:	0.7%

GENERAL

Power Supply		
U.S.A. & Canadian models:		AC 120 V, 60 Hz
European models:		AC 230 V, 50 Hz
Worldwide models:		AC 220-230 V and 120 V switchable, 50/60 Hz
Power Consumption		
U.S.A. & Canadian models:		4.2 A
Other area models:		240 W
Dimensions (W × H × D):		435 × 140 × 324 mm 17-1/8" × 5-1/2" × 12-3/4"
Weight:	TX-SV373	9.6 kg, 21.2 lbs.
	TX-SE350	9.8 kg, 21.6 lbs.

REMOTE CONTROL

TX-SV373:	RC-385S
TX-SE350:	RC-387S
Transmitter:	Infrared
Signal range:	Approx. 5 meters, 16 ft.
Power supply:	Two "AA" batteries (1.5V × 2)

Specifications and features are subject to change without notice.

SERVICE PROCEDURES

1. Replacing the fuses

This symbol located near the fuse indicates that the fuse used is fast operating type. For continued protection against fire hazard, replace with same type fuse. For fuse rating refer to the marking adjacent to the symbol.

Ce symbole indique que le fusible utlise est a rapide. Pour une protection permanente, n'utiliser que des fusibles de meme type. Ce darnier est indique la qu le present symbol est appose.

Ref.No.	Part No.		Description
M901	5120-0024-0	⚠	3.15A TIME-LAG 5 <W>
M902	5120-0024-0	⚠	3.15A TIME-LAG 5 <P/T>
M902	5120-0200-0	⚠	T5A/125V <D/W>
M909	5100-2530-1B	⚠	T2.5A/250V IEC <P/T>
M905,M906	5120-0019-0	⚠	T4A L125V UL, Fuse <D>
M905,M906	5120-0203-0	⚠	T4A/250V,Fuse <P/T/W>

NOTE: <D>: 120V model only
<P>: 230V model only
<T>: Asian model only
<W>: Worldwide model only

2. To Initialize the unit

This device employs a microprocessor to perform various functions and operations. If interference generated by an external power supply, radio wave, or other electrical source results in accident which causes the specified operations and functions to operate abnormally.

To perform a result, please follow the procedure below.

1. Press and hold down VIDEO 1 button, then press SPEAKER A button.

2. After "clear" is displayed, the prest memory and each mode stored in the memory, such as surround, are initialized and will return to the factory settings.

3. Safety-check out

(Only U.S.A. model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer. Connect the insulating-resistance tester between the plug of power supply cord and the screw on the back panel.

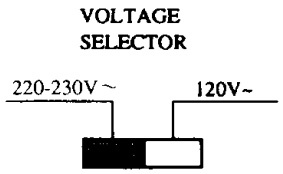
Specifications: 3.3 Mohm±10% at 500V.

4. Change of voltage

Worldwide models are equipment with a voltage selector to conform with local power supplies. This switch is located on the back panel.

Be sure to set this switch to match the voltage of the power supply in your area before turning the power switch on.

This switch is set to 220V at the factory. Voltage is changed by sliding the groove in the switch with the screwdriver to the right or left. Confirm that the switch has been moved all the way to the right or left before turning the power switch on.



5. Memory preservation

This unit does not require memory preservation batteries.

A built-in memory power back-up system preserves contents of the memory during power failures and even when the unit is unplugged.

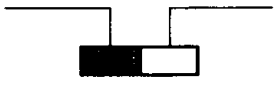
The unit must be plugged in and the power switch turned on and off once in order to charge the back-up system. Note that since this is not a permanent memory, the power switch must be turned on and off a few times each month the keep the back-up system operative.

The period of the time during which memory contents are preserved after power has last been turned off varies depending on climate and placement of the unit. On the average, memory contents are protected over a period of 3 to 4 weeks (a minimum of 2 weeks) after the last time power has been turned off. This period is shorted when the unit is exposed to very high humidity or used in an area with an extremely humid climate.

6. Setting the tuning step frequency

Worldwide models are equipped with a step band selector switch. This switch is located on the back panel. This switch is set to 9 kHz at the factory, but may have to be reset to 10 kHz depending on the area where the unit is used.

	AM band step
Europe:	9 kHz
U.S.A.:	10 kHz



7. Changing the band step

With the exception of the worldwide models, a tuning step selector switch is not provided. When you change the band step, change the parts as shown below.

	To 10kHz	To 9kHz
J712	shorted	open
R724	open	10kohm

PRINTED CIRCUIT BOARD-PARTS LIST

MAIN CIRCUIT PC BOARD ASSEMBLY

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q301	222465	NJM4558D
Q302	22240881	TC9273N-010
Q401,Q402	22240293	NJM4558L
Q921	222780124NEC	UPC7812H
Q922	222790125NEC	UPC79M12HF
Q923	222780565JRC	NJM78M56FA
	Transistors	
Q1501-Q1503	2211732 or	2SC1845-F or
Q1514	2211733	2SC1815-E
Q1504,Q1505	2211353	2SA949-O
Q1506,Q1508	2211633	2SC2229-0
Q1507	2211353	2SA949-O
Q1509	2211633	2SC2229-0
Q1510	2203010	2SC5171
Q1511	2203000	2SA1930
Q1512	2203043	2SC5197-O
Q1513	2203033	2SA1940-O
Q1515	2213284	2SC1740S-R
Q423-Q425	2213631	RN1241-A
Q427	2212600	DTA114ESA
Q501-Q506	2211732 or	2SC1845-F or
Q527,Q528	2211733	2SC1815-E
Q507-Q510	2211353	2SA949-O
Q511,Q512	2211633	2SC2229-O
Q513,Q514	2211353	2SA949-O
Q515-Q518	2211633	2SC2229-O
Q519,Q520	2203010	2SC5171
Q521,Q522	2203000	2SA1930
Q523,Q524	2203043	2SC5197 (O)
Q526,Q541	2203033	2SA1940 (O)
Q529,Q530	2213284	2SC1740S-R
Q581,Q582	2211732 or	2SC1845-F or
	2211733	2SC1815-E
Q583	2211792	2SA992
Q591-Q593	2213640	DTC123JSA
Q924	2211455	2SA1015-GR
	Diodes	
D501,D503	4804-0040-1	IN4004
D591,D592	223163	1SS133
D595	223163	1SS133
D901	223260	1N4148
D910	22380022	RBV602
D911	22380021	RS403L
D915-D921	4804-0040-1	IN4004
D922	224473304	MTZJ33D
D923	223163	1SS133
	Capacitors	
C1501,C1512	354744709	47 μ F,16V,Elect.
C1502	374721015	100pF±10%,50V,Mylar
C1503	354742219	220 μ F,16V,Elect.
C1504,C1505	354781009	10 μ F,50V,Elect.
C1509	345340201	2pF±0.2 CH,50V,Ceramic
C1511	374721044	0.1 μ F±5%,50V,Plastic
C1517,C922	354781009	10 μ F,50V,Elect.
C303,C304	354741009	10 μ F,16V,Elect.
C307,C308	354721019	100 μ F,6.3V,Elect.
C309,C310	371126824	6800pF±5%,50V,Mylar
C311,C312	371121824	1800pF±5%,50V,Mylar
C313-C316	354741009	10 μ F,16V,Elect.
C391,C392	374721015	100pF±10%,50V,Mylar
C401,C402	354744709	47 μ F,16V,Elect.
C413,C414	354741009	10 μ F,16V,Elect.
C415,C416	371121034	0.01 μ F±5%,50V,Mylar
C417,C418	374721015	100pF±10%,50V,Mylar
C463	354741009	10 μ F,16V,Elect.
C465-C467	354744709	47 μ F,16V,Elect.
C501,C502	354744709	47 μ F,16V,Elect.
C503,C504	374721015	100pF±10%,50V,Mylar
C505,C506	354742219	220 μ F,16V,Elect.
C507-C510	354781009	10 μ F,50V,Elect.
C519,C520	374721044	0.1 μ F±5%,50V,Plastic
C521,C522	354744709	47 μ F,16V,Elect.
C523,C524	345340201	2pF±0.2 CH,50V,Ceramic
C525,C526	354774719	470 μ F,63V,Elect.
C581	354721019	100 μ F,6.3V,Elect.
C910	354732219	220 μ F,10V,Elect.
C915,C916	354786829	6800 μ F,63V,Elect.
C917	354753329	3300 μ F,25V,Elect.
C918	354761029	1000 μ F,35V,Elect.
C923,C932	354781009	10 μ F,50V,Elect.
C924,C925	354764729	4700 μ F,35V,Elect.
C926	354784709	47 μ F,50V,Elect.
C928,C929	354781019	100 μ F,50V,Elect.
	Resistors	
R1512,R1513	443526804	68 Ω ±5%,1/2W,Metal oxide
R1515	443525604	56 Ω ±5%,1/2W,Metal oxide
R1516	443526804	68 Ω ±5%,1/2W,Metal oxide
R1522,R1523	453630224	2.2 Ω ±5%,1/2W,Metal
R1524	4800048	RWR 5W 0.22R X2,Metal plate
R1529	453630824	8.2 Ω ±5%,1W,Metal
R1532	4756-2226-3-06	SVR 2.2K H3,Trimming
R521-R524	443526804	68 Ω ±5%,1/2W,Metal oxide
R525,R526	443525604	56 Ω ±5%,1/2W,Metal oxide
R527,R528	443526804	68 Ω ±5%,1/2W,Metal oxide
R539-R542	453630224	2.2 Ω ±5%,1/2W,Metal
R547,R548	4800048	RWR 5W 0.22R X2,Metal plate
R555,R556	443530824	8.2 Ω ±5%,1W,Metal
R557,R558	443533904	390 Ω ±5%,1W,Metal oxide
R567,R569	453630224	2.2 Ω ±5%,1/2W,Metal resistor
R573,R574	4756-2226-3-06	SVR 2.2K,Trimming
	Relays	
RL501,RL502	4500-0910-0	24VDC,125V OSA-SS-224DM3 OE
RL503	4500-0900-0	24VDC,250V SDT-SS-124D OEG
	Terminals	
PH,DVD	2113-1308-0	6P RCA,Phono,DVD
SP	2113-1312-0	8P,Speaker
V2	2113-1309-0	4P RCA,Video-2
	Connectors	
J1501	2113-1160-0	2P,Wafer
J201A	7707-1080-2004	Connector
J202A	2101-1591-0	Flexible connector
J203A	2101-1641-0	Wafer
J204A	7706-1100-2004	Connector
J205A	2101-1611-0	Wafer
J206A	2102-041S-004	4P, Wafer
J501,J502	2113-1160-0	2P, Wafer
J603B	2101-1621-0	Wafer
J801B	7708-1150-3004	Connector
J901B	2102-071S-004	7P, Connector
J302B	2101-1651-0	4P, Wafer
J303B	2101-1631-0	6P, Wafer

CIRCUIT NO.	PART NO.	DESCRIPTION
	Heat sinks	
HQ921	5400-1611-0	
HQ922,HQ923	5400-0831-0	

DOLBY PROLOGIC PC BOARD ASSEMBLY

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
U601,U603	222465	NJM4558D
U602	3131-5750-0	NJW1103FC3
U604	22241296	M62447SP
U605	22240800	TC9164AN
U606,U607	222465	NJM4558D
U609	222780094MAT	AN7809
	Transistors	
Q601	4858-050I-5	LM8050I
Q602	4858-550I-5	LM8550I
Q603-Q605	2213631	RN1241-A
Q606	2215162	2SD667A
Q607	2213631	RN1241-A
	Diodes	
D601,D602	224470753	MTZJ7.5C
D603	224470562	MTZJ5.6B
	Coil	
L601-L604	233409K101	100 μ H±10%,Choke
	Oscillator	
M602	2300-1400-0	4MHz, Crystal
	Capacitors	
C600,C646	374721044	0.1 μ F±5%,50V,Plastic
C601,C602	354741009	10 μ F,16V,Elect.
C605,C606	354780229	2.2 μ F,50V,Elect.
C609,C629	354741009	10 μ F,16V,Elect.
C612-C614	354742209	22 μ F,16V,Elect.
C615-C617	354740339	3.3 μ F,16V,Elect.
C619-C622	354741009	10 μ F,16V,Elect.
C623-C625	354742209	22 μ F,16V,Elect.
C628	354744709	47 μ F,16V,Elect.
C632,C636	354780229	2.2 μ F,50V,Elect.
C633,C637	354741009	10 μ F,16V,Elect.
C640	354780229	2.2 μ F,50V,Elect.
C641,C697	354744709	47 μ F,16V,Elect.
C642-C645	354741009	10 μ F,16V,Elect.
C648,C649	345342704	27pF±5% CH,50V,Ceramic
C650,C690	354742209	22 μ F,16V,Elect.
C651	354750109	1 μ F,25V,Elect.
C652,C658	371121034	0.01 μ F±5%,50V,Mylar
C653,C659	371121824	1800pF±5%,50V,Mylar
C654,C657	371126834	0.068 μ F±5%,50V,Plastic
C655,C656	374721044	0.1 μ F±5%,50V,Plastic
C660-C662	374721044	0.1 μ F±5%,50V,Plastic
C663	371121224	1200pF±5%,50V,Mylar
C665	371128214	820pF±5%,50V,Mylar
C666,C693	371125624	5600pF±5%,50V,Mylar
C667	374724734	0.047 μ F±5%,50V,Plastic
C668,C669	374722344	0.22 μ F±5%,50V,Mylar
C670,C671	354750479	4.7 μ F,25V,Elect.
C672,C673	374722344	0.22 μ F±5%,50V,Mylar
C674	374721044	0.1 μ F±5%,50V,Plastic
C675,C676	374724734	0.047 μ F±5%,50V,Plastic
C677,C678	374721044	0.1 μ F±5%,50V,Plastic
C679,C680	374722334	0.022 μ F±5%,50V,Plastic
C681,C687	371126814	680pF±5%,50V,Mylar
C682-C686	374721044	0.1 μ F±5%,50V,Plastic
C688,C689	354741009	10 μ F,16V,Elect.
C691,C694	354742219	220 μ F,16V,Elect.
C692,C695	354741009	10 μ F,16V,Elect.
C696	374796844	0.68 μ F±5%,63V,Plastic
C698	354742209	22 μ F,16V,Elect.
C699	354741009	10 μ F,16V,Elect.
	Connectors	
J205b	2101-1681-0	Socket
J304b	2102-051S-004	5P,Wafer
J601a	7710-1290-2004	Connector
J603a	2101-1801-0	Socket
J604a	2102-031S-004	3P,Wafer

ROTARY PC BOARD ASSEMBLY

CIRCUIT NO.	PART NO.	DESCRIPTION
P701	4750-6000-0	EC16B24304,Rotary encoder

SURROUND PC BOARD ASSEMBLY

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q801-Q806	2211732 or	2SC1845-F or
Q829,Q830	2211733	2SC1845-E
Q807,Q808	2213284	2SC1740S-R
Q809-Q812	2211353	2SA949-O
Q813,Q814	2215162	2SD667-A
Q815,Q816	2211353	2SA949-O
Q817-Q820	2211633	2SC2229-0
Q821,Q822	2213284	2SC1740S-R
Q823,Q824	2215173	2SB647A-C
Q825,Q826	2202923	2SC5196-0
Q827,Q828	2202913	2SA1939-0
Q831	2213640	DTC123JSA
	Diodes	
D801,D802	4804-0040-1	IN4004
D803	223163	1SS133
	Capacitors	
C801,C802	354742209	22 μ F,16V,Elect.
C809,C810	354741019	100 μ F,16V,Elect.
C811,C812	354744709	47 μ F,16V,Elect.
C817-C820	354781009	10 μ F,50V,Elect.
C823,C824	374724734	0.047 μ F±5%,50V,Plastic
C829,C830	354762219	220 μ F,35V,Elect.
	Resistors	
R819-R822	443526804	68 Ω±5%、1/2W, Metal oxide
R827,R828	443525604	56 Ω±5%、1/2W, Metal oxide
R837,R838	443521014	100 Ω±5%、1/2W, Metal oxide
R841-R844	453630224	2.2 Ω±5%、1/2W, Metal
R849,R850	443525604	56 Ω±5%、1/2W, Metal oxide
R851,R852	443526804	68 Ω±5%、1/2W, Metal oxide
R853,R854	4000129	0.22 Ω±5%X2,2W, Metal plate
R857,R858	443530824	8.2 Ω±5%、1W, Metal
R859,R860	453630224	2.2 Ω±5%、1/2W, Metal
R865	443531014	100 Ω±5%、1W, Metal oxide
R867,R868	4756-2026-3-03	SVR 2K,Trimming
	Relay	
M801	4500-0910-0	24VDC,125VA,3A
	Connectors	
SP	2113-1313-0	6P,Speaker terminal
J604b	7703-1320-2004	3P,Connector
J801a	2102-081S-004	8P,Wafer
J206B	7704-1150-2004	4P,Connector
TP801,TP802	2101-1931-0	2P,Wafer

POWER SWITCH PC BOARD

CIRCUIT NO.	PART NO.	DESCRIPTION
C911	3500191	⚠ DE7150F-103M, IS capacitor
C911a	27301216	⚠ SB1925A,Cover for C911
M907	5200-3665-0	⚠ Power switch

TONE PC BOARD ASSEMBLY

CIRCUIT NO.	PART NO.	DESCRIPTION
C411,C412	374721834	0.018 μ F±5%,50V,Plastic capacitor
J201b	2102-071S-004	7P, Wafer
R419,R421	4750-6166-0	100KWX2,Variable resistor

VIDEO PC BOARD ASSEMBLY

CIRCUIT NO.	PART NO.	DESCRIPTION
	IC	
Q253	222840661	4066
	Transistors	
Q256-Q258	4858-050I-5	LM8050I
Q254	4858-550I-5	LM8050I
Q251,Q252	2213284	2SC1740S-R
	Capacitors	
C250-C252	354721019	100 μ F,6.3V,Elect.
C255,C256	354734719	470 μ F,10V,Elect.
C259	354741029	1000 μ F,16V,Elect.
	Terminals	
M201	2113-1315-0	4P,RCA jack
M202	2113-1316-0	1P,RCA jack
	Connector	
J204b	2102-061S-004	6P,Wafer

VIDEO 1 PC BOARD ASSEMBLY

CIRCUIT NO.	PART NO.	DESCRIPTION
J601b	2102-101S-004	10P,Wafer
M601	2113-1309-0	4P,RCA jack
M603	2113-1310-0	2P,RCA jack
M602	2113-1311-0	1P,RCA jack

KEY BOARD PC BOARD ASSEMBLY

CIRCUIT NO.	PART NO.	DESCRIPTION
	FL tube	
M740	2212196	12-BT-111GK
	Remote sensor	
U702	241305	GP1U281X
	IC	
U701	3130-8170-1	UPD78043F
	Transistors	
Q701,Q702	2213284	2SC1740S-R
Q703	2213290	DTC144ES
Q707	2212600	DTA114ESA
	Diodes	
D701,D702	223260	1N4148
D703	224471603	MTZJ16C
D704,D705	223260	1N4148
D706,D707	224470562	MTZJ5.6B
D708	223260	1N4148
D709	225290	SEL4110R
D710-D712	223260	1N4148
	Coil	
L701-L703	233409K220	22 μ H±10%,Choke
	Oscillator	
M741	2300-0120-0	4.19MHz, Ceramic

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C701	354780109	1 μ F,50V,Elect.
C702	374794744	0.47 μ F±5%,63V,Plastic
C703,C709	354721019	100 μ F,6.3V,Elect.
C704,C705	354780109	1 μ F,50V,Elect.
C706	3000076	0.1F, 5.5V, Super
C711	354721019	100 μ F,6.3V,Elect.
	Switches	
M701-M703	5200-3529-0	Tact <350>
M707-M729	5200-3529-0	Tact
M742	5200-3529-0	Tact <350>
	Resistors	
R776	4750-6176-0	10KB,Variable <350>
R804,R805	4750-6176-0	10KB,Variable <350>
	Connectors	
J1101B	7706-1060-2004	6P <350>
J1102b	7403-1090-21	3P, Wafer
J202b	2101-1581-0	3P,Connector
J701a	7706-1310-2004	Connector
J702a	7403-1060-21	Flat wire
	Holder	
M740a	4152-5741-0	FL

POWER PC BOARD ASSEMBLY

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistor	
Q901	2213640	DTC123JSA
	Diodes	
D901	223163	1SS133T-77
D902-D905	4804-0040-1	IN4004
	Capacitors	
C908	3500191	⚠ DE7150F-103M, IS capacitor
C910	354743319	330 μ F,16V,Elect.
	Resistors	
R903	443523354	⚠ 3.3MΩ±5%, 1/2W, Metal oxide <D>
R904	453630824	8.2Ω±5%, 1/2W, Metal
	Transformer	
T902	1806-2311-0	⚠ EI-35,200MA
	Fuses	
M901	5120-0024-0	⚠ 3.15A TIME-LAG 5 <W>
M902	5120-0024-0	⚠ 3.15A TIME-LAG 5 <P/T>
M902	5120-0200-0	⚠ T5A/125V <D/W>
M909	5100-2530-1B	⚠ T2.5A/250V IEC <P/T>
	Relay	
M903	4500-0890-0	⚠ 12VDC,250V SDT-SS-112DM OEG
	AC outlet	
	2113-1317-0	⚠ 250V/2.5A <P/T/W>
	Switch	
M908	5200-3530-0	⚠ 110-220V,Voltage selector
	Fuse holders	
M901,M902	4132-1011-0	⚠ Fuse holder <W>
M902	4132-1011-0	⚠ Fuse holder <D>
M902,M909	4132-1011-0	⚠ Fuse holder <P/T>
	Connectors	
J901a	4131-9321-0	Terminal
J902A	7704-1150-3004	Connector ass'y

RI PC BOARD

CIRCUIT NO.	PART NO.	DESCRIPTION
J902b	2102-041S-004	4P,Wafer
J701b	2102-061S-004	6P,Wafer
M701	2113-1179-0	RI terminal
M702	5200-3171-0-01	Slide switch <W>

SECONDARY PC BOARD

CIRCUIT NO.	PART NO.	DESCRIPTION
C901-C907	374791044	0.1 μ F±5%,63V,Plastic capacitor
M905a,M906a	4132-1011-0	Fuse holder
R901,R902	453630224	2.2Ω±5%、1/2W, Metal resistor
M905,M906	5120-0019-0	T4A L125V UL, Fuse <D>
M905,M906	5120-0203-0	T4A/250V,Fuse <P/T/W>
J901a	7707-1300-2004	7 P, Connector wire

TUNER PC BOARD

CIRCUIT NO.	PART NO.	DESCRIPTION
	Front end	
TU001	240131	ENV172D4G1 <D>
	240132	ENV172D3G1 <P/T/W>
	ICs	
Q121	22241076	LM7001J
Q141	22241151	LA1837
Q185	22241297	BU1923 <P>
	Transistors	
Q101	2210746	2SC945P <P/T/W>
Q102	2211723	2SC1923-0
Q122	2212445	2SK365-GR
Q123	2213284	2SC1740S(R)
Q124,Q145	2212600	DTA114ESA
Q142	2213284	2SC1740S(R) <P>
Q143,Q144	2212795	2SD1468-S
	Diodes	
D101	224470513	MTZJ5.1C
D102	224470913	MTZC9.1C
	Coils	
L103,L104	233484	NMC-4085,LPF <P/T/W>
L141	233457	NFIF-4081,FM IF
L142	233458	NFIF-4082,FM IF
L171	232174	NMRF-5077,AM RF
L172	5600-3416-S	NMIF-4062,AM IF
L185	1801-101K-M	100 μ H±10%,Choke <P>
	Filters	
X101,X103	3010122	SFE10.7MA5
X102	3010130	SFE10.7MZ2K-A <P/T/W>
X171	2701-0680-0	CF 450 +-1 SFZ45
	Oscillators	
X121	2300-0440-0	7.2MHz, Crystal
X185	2300-1220-0	4.332MHz, crystal <P>
	Capacitors	
C002	354741009	10 μ F,16V,Elect.
C1010,C142	354741019	100 μ F,16V,Elect.
C124,C125	345343004	30pF±5% CH,50V,Ceramic
C126	374723334	0.033 μ F±5%,50V,Plastic
C127,C143	354780229	2.2 μ F,50V,Elect.
C128	354744709	47 μ F,16V,Elect.
C129	354782299	0.22 μ F,50V,Elect.
C131	354721019	100 μ F,6.3V,Elect.
C144	354780479	4.7 μ F,50V,Elect.
C146,C148	354780109	1 μ F,50V,Elect.
C147,C167	354784799	0.47 μ F,50V,Elect.
C151,C177	354780229	2.2 μ F,50V,Elect.
C153,C154	371122724	2700pF±5%,50V,Mylar <P/T/W>
	371123324	3300pF±5%,50V,Mylar <D>
C159,C160	354742209	22 μ F,16V,Elect.
C161,C162	371121524	1500pF±5%,50V,Mylar <P/T>
	371121824	1800pF±5%,50V,Mylar <W>
C163,C164	354742209	22 μ F,16V,Elect.
C165	371122724	2700pF±5%,50V,Mylar <P/T/W>
C169	354744709	47 μ F,16V,Elect.

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C170	374722334	0.022 μ F±5%,50V,Plastic
C175	354741009	10 μ F,16V,Elect.
C171	345340802	8pF±0.5 CH,50V,Ceramic
C173	374724734	0.047 μ F±5%,50V,Plastic
C179	354742209	22 μ F,16V,Elect.
C186,C190	354721019	100 μ F,6.3V,Elect. <P>
C188,C189	345343304	33pF±5% CH,50V,Ceramic <P>
C191	371121024	1000pF±5%,50V,Mylar <P>
	Resistors	
R141	4756-2236-3-06	SVR 22K,Trimming
R156	4756-1036-3-03	SVR 10K,Trimming
	Terminal	
P103	2107-1061-0	Antenna
	Connectors	
J203b	2101-1601-0	16P,Socket
TP141	2113-1160-0	2P, Wafer

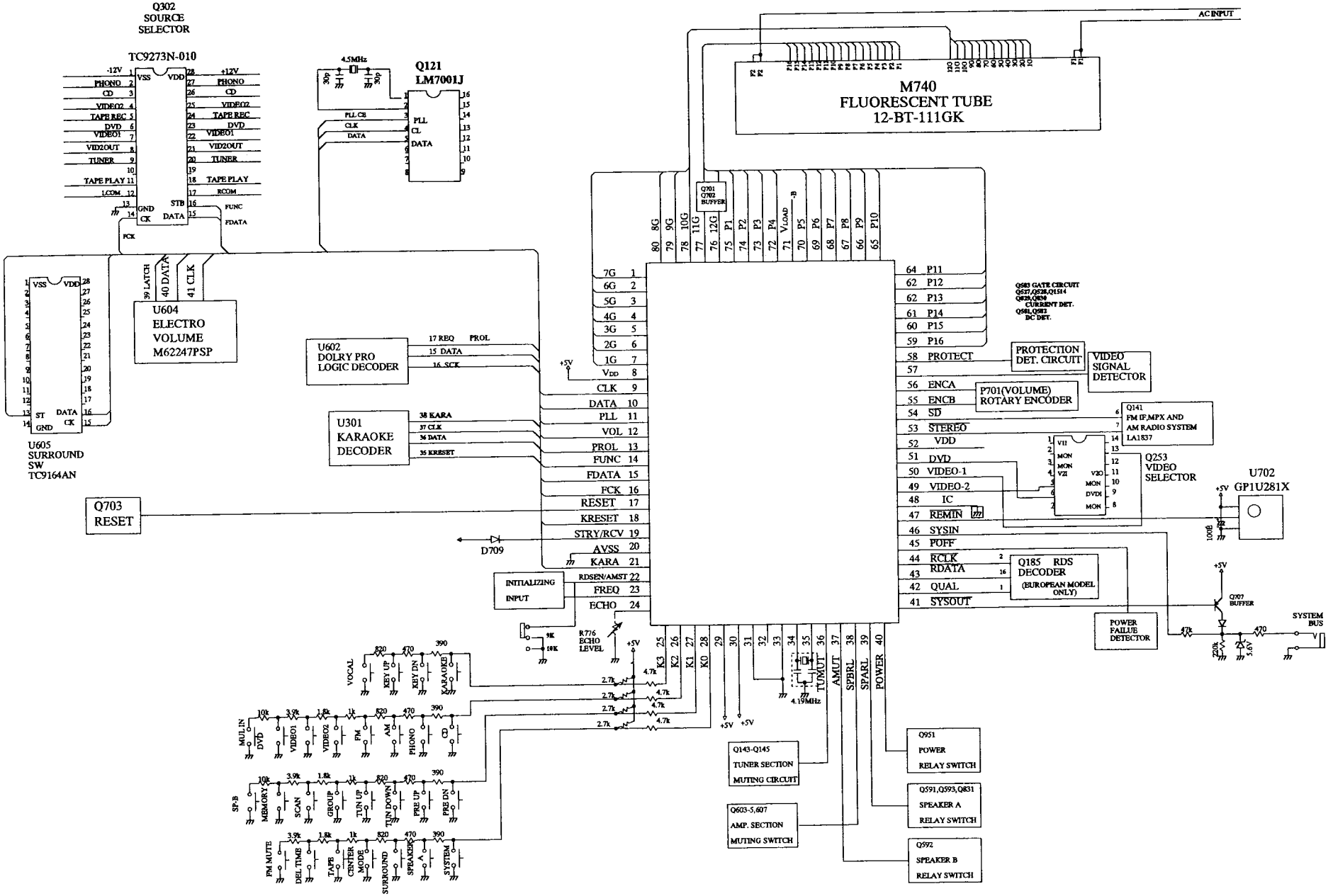
HEADPHONE TERMINAL PC BOARD ASSEMBLY

CIRCUIT NO.	PART NO.	DESCRIPTION
J571	2113-1081-2	Headphone jack <B>
	2113-1081-1	Headphone jack <G>

NOTE: <D>: 120V model only
<P>: 230V model only
<T>: Asian model only
<W>: Worldwide model only
<B>: Black model only
<G>: Golden model only
<350>: Model TX-SE350 only

NOTE: THE COMPONENTS INENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

MICROPROCESSOR-CONNECTION DIAGRAM



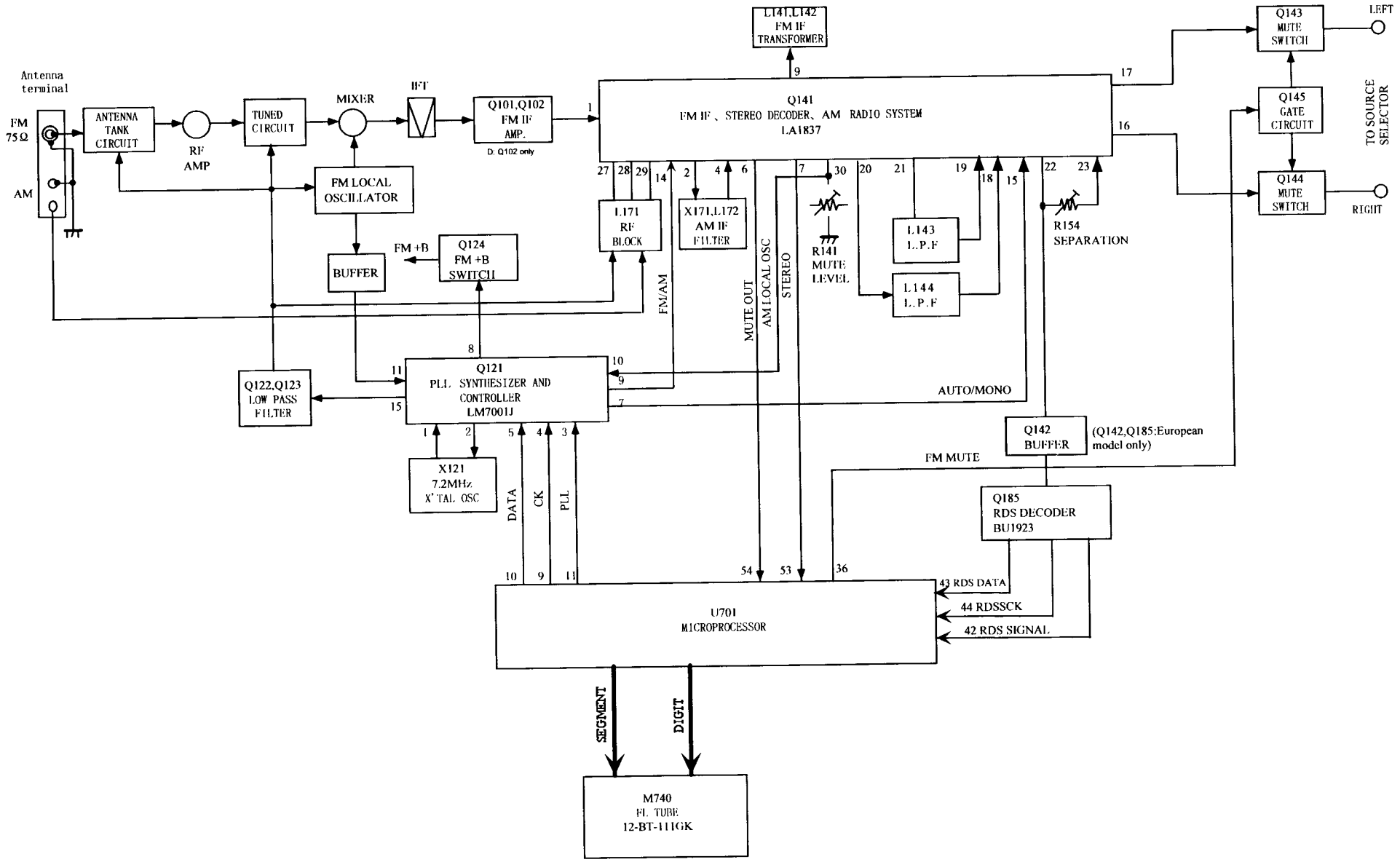
TREMINAL DESCRIPTIONS

Pin No.	Function	Descriptions
1~7	7G~1G	Grid output terminals
8	VDD	Positive power supply terminal (+5V)
9	CLK	Clock output terminal.
10	DATA	Data output terminal.
11	PLL	Chip enable output terminal for PLL IC Q121.
12	VOL	Clock output terminal for electro volume IC U604.
13	PROL	Request output terminal for DOLBY IC U602.
14	FUNC	Strobe output terminal for function switch IC Q302
15	FDATA	Ddta output terminal for function and surround switch ICs.
16	FCK	Clock output terminal for function and surround switch ICs.
17	RESET	System reset input terminal
18	KRESET	Reset output terminal for KARAOKE decoder.
19	STBY/RECV	STANDBY/RECEIVED indication output terminal
20	AVSS	Ground terminal for A/D converter
21	KARA	Initializing input terminal
22	RDSEN/AMS	Initializing input terminal for RDS decoder/AM
		band switch connection terminal.(Worldwide model)
23	FREQ	Initializing input terminal for region of frequency range
24	ECHO	Echo volume connction terminal
25-28	K3~K0	Key input terminals
29	AVDD	Analog power supply terminal (+5V)
30	AVREF	Reference voltage input terminal for A/D converter
31	XT1	Crystal connection terminals for subsystem clock
32	XT2	Not used.
33	VSS	Ground terminal
34	X1	Crystal connection terminals for main system clock
35	X2	Connect the 4.19MHz ceramic oscillator.
36	TUMUT	Muting output terminal for tuner section
37	AMUT	Muting output terminal for amplifier of front channels.
38	SPBRL	Speaker relay B control output terminal
39	SPARL	Speaker relay A control output terminal
40	POWER	Power source control output terminal
41	SYSOUT	System code output terminal
42	QUAL	Detection input terminal for RDS broadcast
43	RDDATA	Data input terminal for RDS broadcast
44	RCLK	Clock input terminal from RDS demodulator

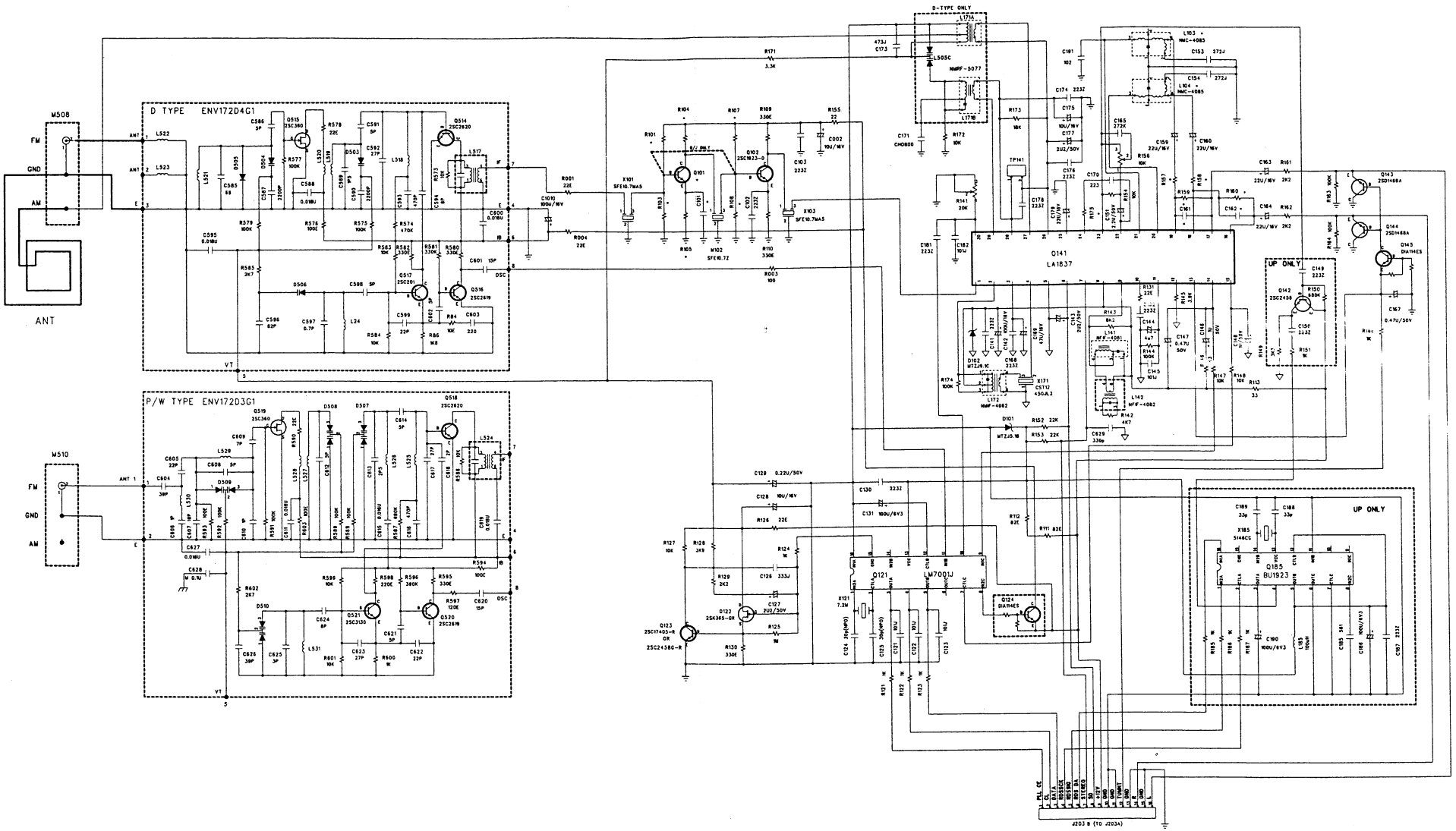
Pin No.	Function	Descriptions
45	POFF	Power failure detection input terminal
46	SYSIN	System code input terminal
47	REMIN	Remote control signal input terminal
48	IC	Internal connection terminal
49	VIDEO2	Video slector control output terminal
50	VIDEO1	Video slector control output terminal
51	DVD	Video slector control output terminal
52	VDD	Power supply terminal (+5V)
53	STEREO	Stereo broadcast detection input terminal
54	SD	Broadcast detection input terminal
55,56	ENCB,A	Rotary encoder connction terminals for Volume.
57		Not used.
58	PROTECT	Detection input terminal for protection circuit
59-70	P16~P5	Segment output terminals
71	VLOAD	Resistor connection terminal for FIP controller and driver
72	P4~P1	Segment output terminals
76~80	12G~8G	Grid output terminals

BLOCK DIAGRAM

TUNER SECTION



SCHEMATIC DIAGRAM



	R101	R104	R107	R103	R105	R108	R175	R159	R160	C101	C161	C162	Q101	R157	R158	J157	J111
UD	3K3	–	–	1K	–	–	33K	68K	68K	–	332	332	–	3K3	3K3	NO	YES
UP	33K	330	3K3	12K	680	470	56K	330K	330K	223	152	152	2SC945A-P	2K7	2K7	YES	NO
UWT	33K	330	3K3	12K	660	470	56K	330K	330K	223	182	182	2SC945A-P	2K7	2K7	YES	NO

Preparation

1. Input

FM mono: 1kHz, 75kHz devi., 60dB/μV

FM stereo: 1kHz, 67.5kHz devi., 60dB/μV

Pilot signal 19kHz, 7.5kHz devi.

AM: 400Hz, 30% mod.

2. Outputs

Connect the non-inductive type resistor of 8 ohms to the all speaker terminals unless otherwise noted.

FM Adjustment

Item	Step	Connection of instrument	FM SG output	Stereo modulator output	Tuning frequency	Output indicator	Adjustment point	Adjust for	Remarks
FM IF/RF	1	Fig.1	99.0MHz 1kHz 75kHz devi. 65dBf(60dB)	—	99.0MHz	DC voltmeter	L141	0±20mV	FM MUTE/MODE switch:ON/STEREO Repeat the steps 1 and 3 until no further adjustment is necessary.
	2					AC voltmeter	IFT on the front end	Maximum	
	3					Distortion analyzer	L142	Minimum	
Stereo Distortion		Fig.2	99.0MHz Ext. mod. 65dBf(60dB)	Channel L or R 1kHz	99.0MHz	Distortion analyzer	IFT on the front end	Minimum	Don't turn more than ±180°
Stereo Separation	1	Fig.2	99.0MHz Ext. mod. 65dBf(60dB)	Channel L 1kHz	99.0MHz	Channel R AC voltmeter	R156	Minimum	Maximum and same separation
	2			Channel R 1kHz		Channel L AC voltmeter		Minimum	
Muting Level		Fig.3	99.0MHz 19.2dBf(14dB)	—	99.0MHz	Oscilloscope or TUNED indicator	R141	Signal output or light on	

AM adjustment

120V model

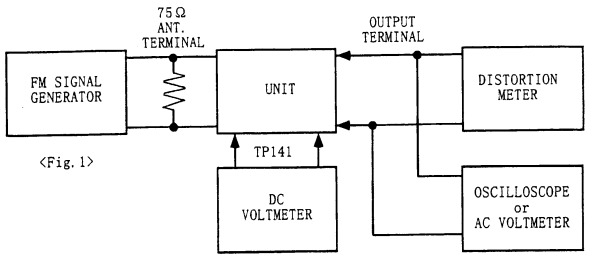
Step	AM SG output	Tuning Frequency	Output Indicator	Adjustment point	Adjust for
1		530kHz	Digital DC voltmeter	OSC coil on RF block L171	1.4±0.2V
2	600kHz 400Hz 30% mod. 60dB/m	600kHz	AC voltmeter	RF coil on RF block L171	Maximum
3	990kHz 400Hz 30% mod. 60dB/m	990kHz	AC voltmeter	L172	Maximum

Reference Specification
FM tuned voltage: 87.5MHz~108.0MHz
More than 1.3V~Less than 9.0V
AM tuned voltage: 530kHz~1710kHz
1.4±0.5V~Less than 9.0V

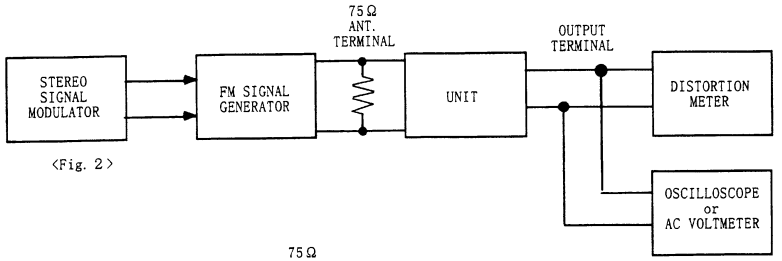
230V and worldwide models

Step	AM SG output	Tuning Frequency	Output Indicator	Adjustment point	Adjust for
1		522kHz or 531kHz	Digital DC voltmeter	OSC coil on RF block L171	1.4±0.2V
2	603kHz 400Hz 30% mod. 60dB/m	603kHz	AC voltmeter	RF coil on RF block L171	Maximum
3	999kHz 400Hz 30% mod. 60dB/m	999kHz	AC voltmeter	L172	Maximum

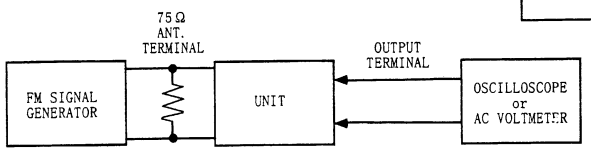
Reference Specification
FM tuned voltage: 87.5MHz~108.0MHz
more than 1.3V ~Less than 9V
AM tuned voltage: 522kHz~1611kHz
1.4±0.2V~Less than 9.0V
(230V model)
AM tuned voltage: 531kHz~1602kHz
1.4±0.2V~Less than 9.0V
(Worldwide model)



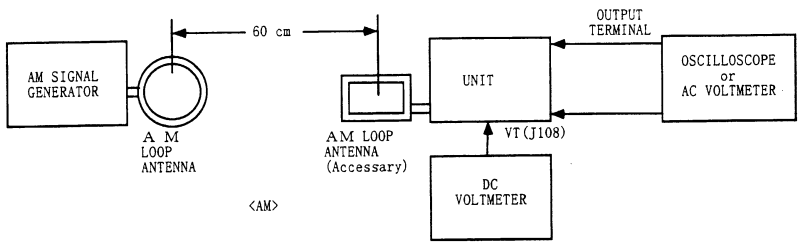
<Fig. 1>



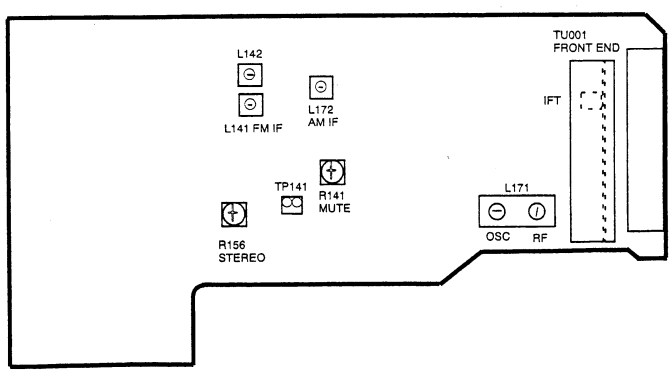
<Fig. 2>



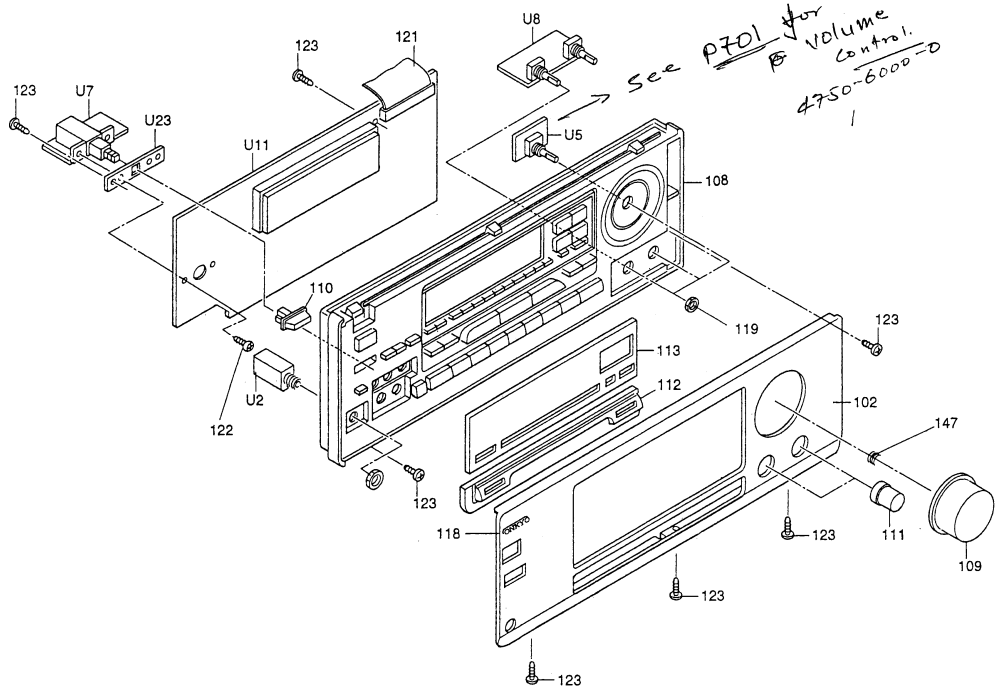
<Fig. 3>

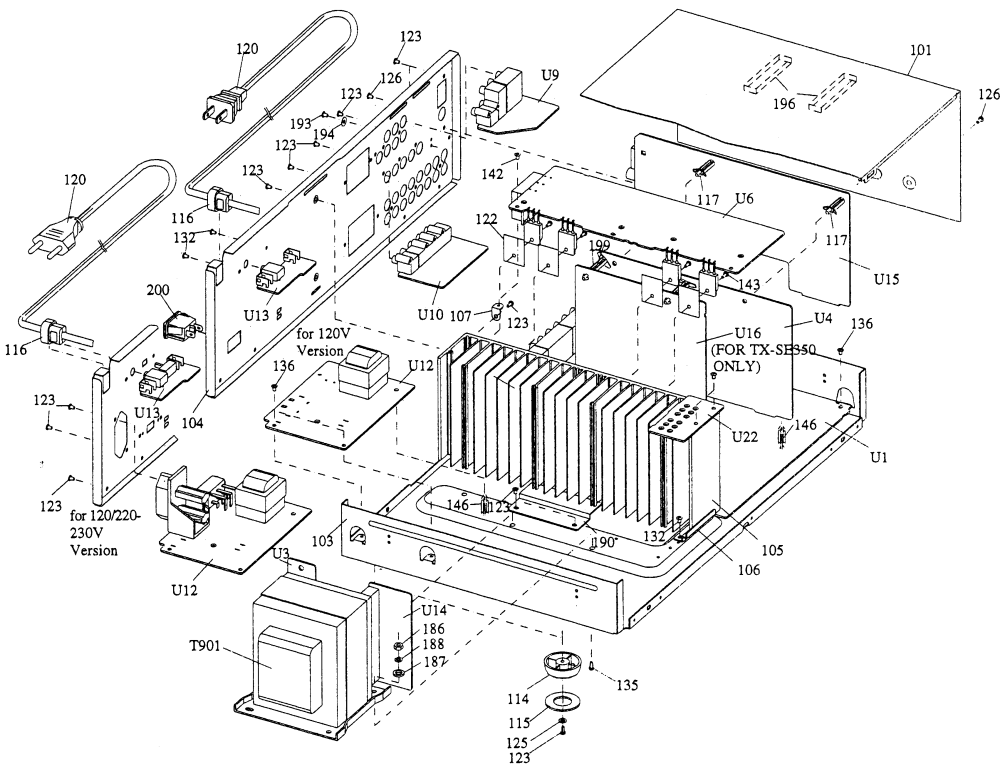


<AM>



EXPLODED VIEWS





REF. NO.	PART NO.	DESCRIPTION
101	1402-7611-0	Top cover
102	1402-7591-1	Front panel <D/T/W>
	1402-7592-1	Front panel <P>
103	1402-7620-0	Chassis
104	1402-7601-0	Rear panel <D>
	1402-7602-0	Rear panel <P>
	1402-7603-0	Rear panel <T>
	1402-7604-0	Rear panel <W>
	1402-7605-0	Rear panel <R>
105	5400-4001-0	Heat sink
106	4134-0121-0	Bracket, heat sink
107	4152-0451-0	Bracket L
108	1465-2301-0	Front bracket
109	2443-3101-0	Knob, Volume
110	2443-4401-0	Knob, Power
111	2443-3501-0	Knob, Tone
112	1465-2001-0	Decorative frame
113	3716-1501-0	Clear plate
114	27175319A	Leg
115	28141332	Cushion
116	27300750	⚠ Bushing, cord

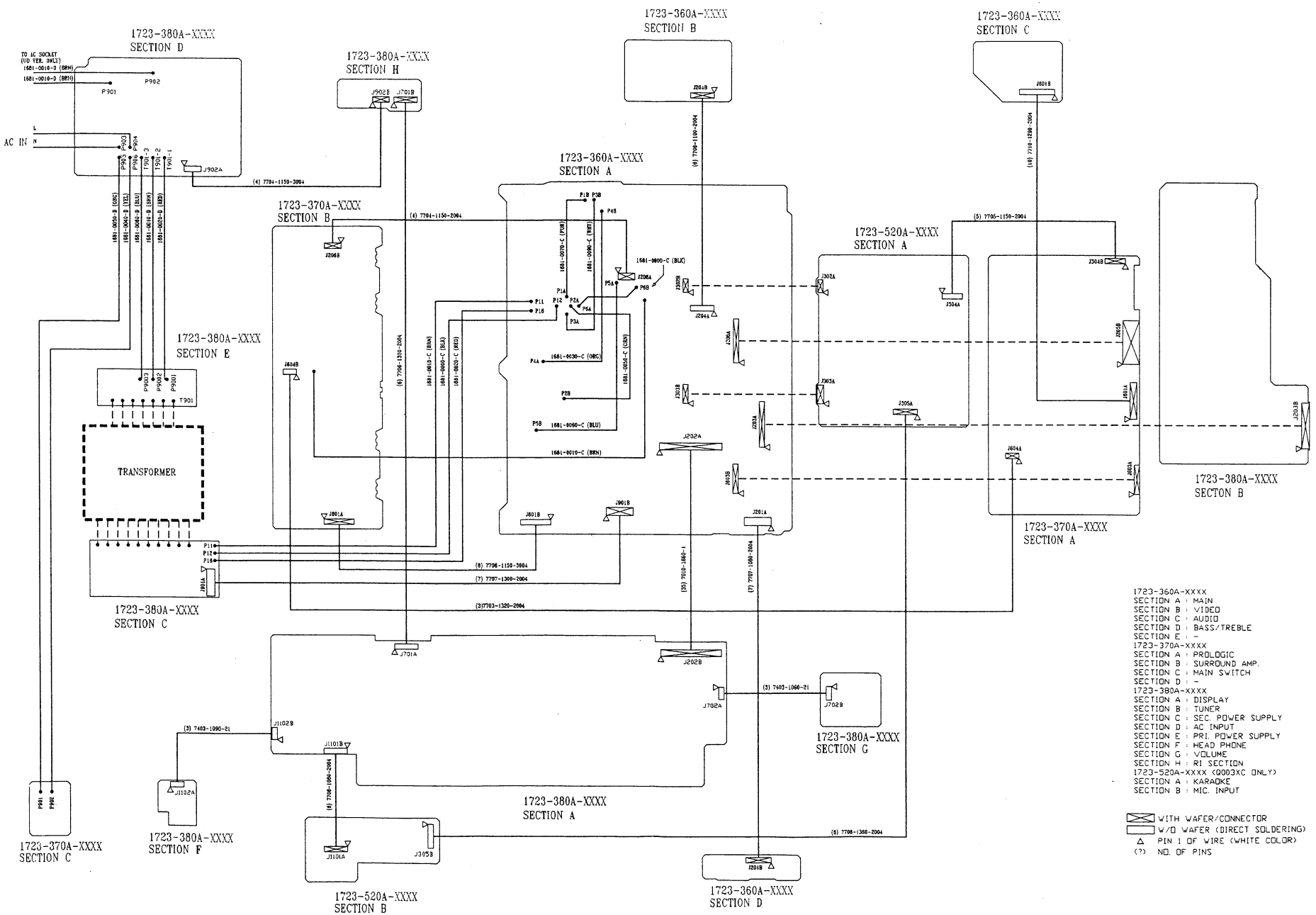
REF. NO.	PART NO.	DESCRIPTION
117	4153-9221-0	Holder, PCB
118	28135244Y	Badge
119	2640-C020-1434	Hexagon nut
120	7009-3100-2	Power supply cord <D>
	7009-3110-0	Power supply cord <P/T/W>
	7009-6750-0	Power supply cord <R>
121	7010-1660-1	Flexible flat cable
122	3100-3211-0	Insulated sheet
123	838130088	3TTB+8B,Self-tapping screw
125	87643006	W3*6,Metal washer
126	2954-3008-3000	T3X8MM,Self-tapping screw
132	82513006	3B+6FN,Tapping screw
135	838140108	M4X10,Self-tapping screw
136	838130068	3TTB+6B,Self-tapping screw
143	831130100	M3X10,Self-tapping screw
146	4152-5831-0	Holder, PC board support
147	2510-3071-1	Knob, spring
150	2600-C006-1604	M12, Metal washer

REF. NO.	PART NO.	DESCRIPTION
186	2640-4030-0703	M4,Nut
187	87644012	W4*12F(BC), Flat washer
188	2607-4010-0703	M4,Spring washer
190	4134-8381-0	Bracket, heat sink
193	838230088	3TTB+8B(Ni), Nickel screw
194	87643010	W3*10F(BC), Flat washer
200	2103-5802-0	⚠ 125V, AC outlet <D>
T901	1806-2310-1	⚠ EI-9 I/P120/230V,Power transformer
U1	PCBQ0020CMAIN	Main PC board ass'y
U2	PCBQ0020CPHO	Headphone PC board ass'y
U3	PCBQ0020CPRI	Primary Power PC board ass'y
U4	PCBQ0020CPROL	Plologic PC board ass'y
U5	PCBQ0020CROT	Rotary PC board ass'y
U6	PCBQ0020CSURR	Surround PC board ass'y
U7	PCBQ0020CSW	Power Switch PC board ass'y
U8	PCBQ0020CTONE	Tone PC board ass'y
U9	PCBQ0020CVDO	Video PC board ass'y
U10	PCBQ0020CVDO1	Video 1 PC board ass'y
U11	PCBQ0020CKEY	Display PC board ass'y <D>
	PCBQ0021CKEY	Display PC board ass'y <P/T>
	PCBQ0023CKEY	Display PC board ass'y <W/R>

REF. NO.	PART NO.	DESCRIPTION
U12	PCBQ0020CPWR	Power PC board ass'y <D>
	PCBQ0021CPWR	Power PC board ass'y <P/T>
	PCBQ0023CPWR	Power PC board ass'y <W>
	PCBQ0024CPWR	Power PC board ass'y <R>
U13	PCBQ0020CRI	RI terminal PC board ass'y <D/P/T>
	PCBQ0023CRI	RI terminal PC board ass'y <W/R>
U14	PCBQ0020CSEC	Secondary PC board ass'y <D>
	PCBQ0021CSEC	Secondary PC board ass'y <P/T/W/R>
U15	PCBQ0020CTUN	Tuner PC board ass'y <D>
	PCBQ0021CTUN	Tuner PC board ass'y <P>
	PCBQ0022CTUN	Tuner PC board ass'y <T>
	PCBQ0023CTUN	Tuner PC board ass'y <W/R>

NOTE: <D>:120V model only
<P>:230V model only
<T>:Asian model only
<W>:Worldwide model only
<R>:Chinese model only

WIRING WIEW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SECTION D
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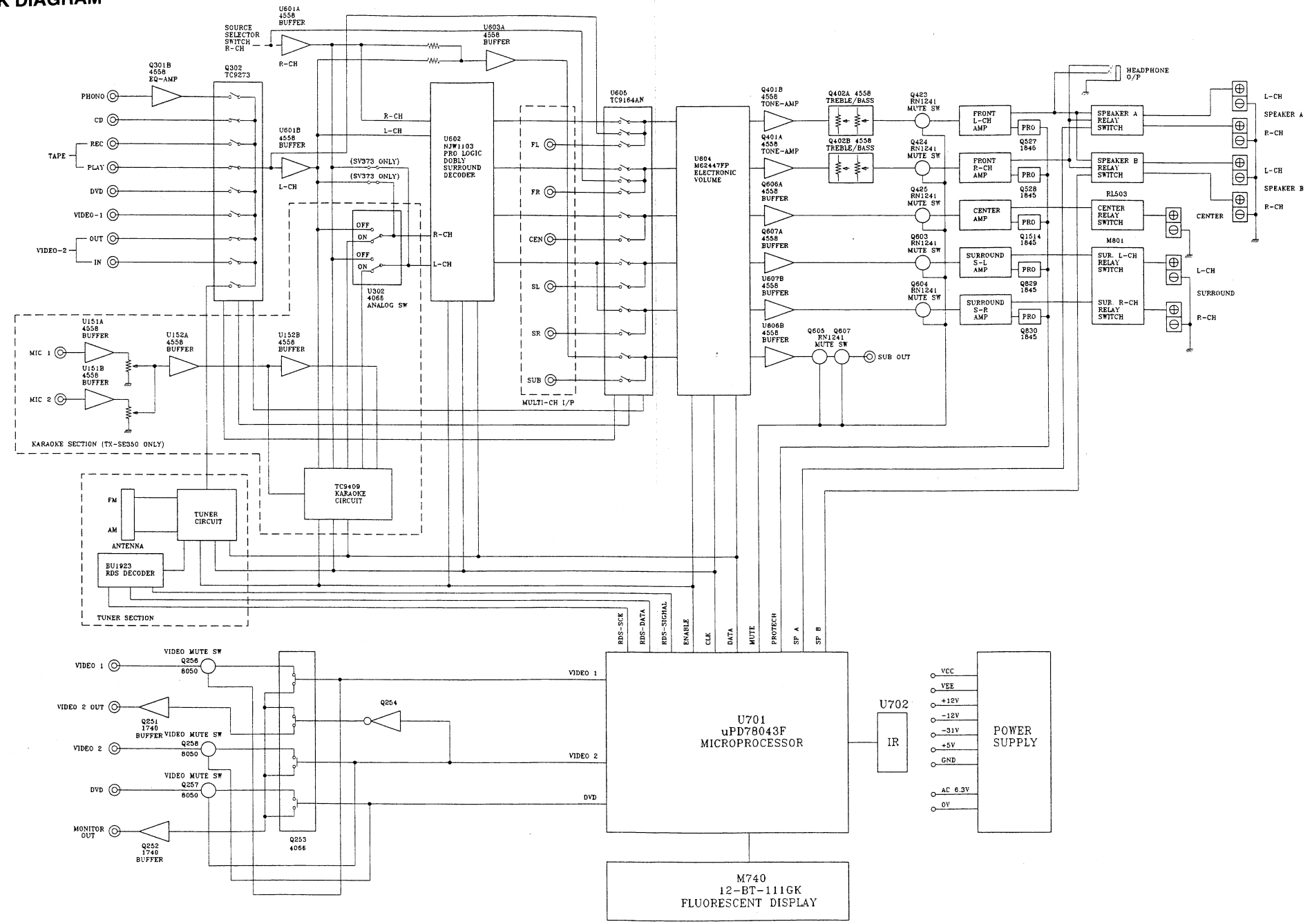
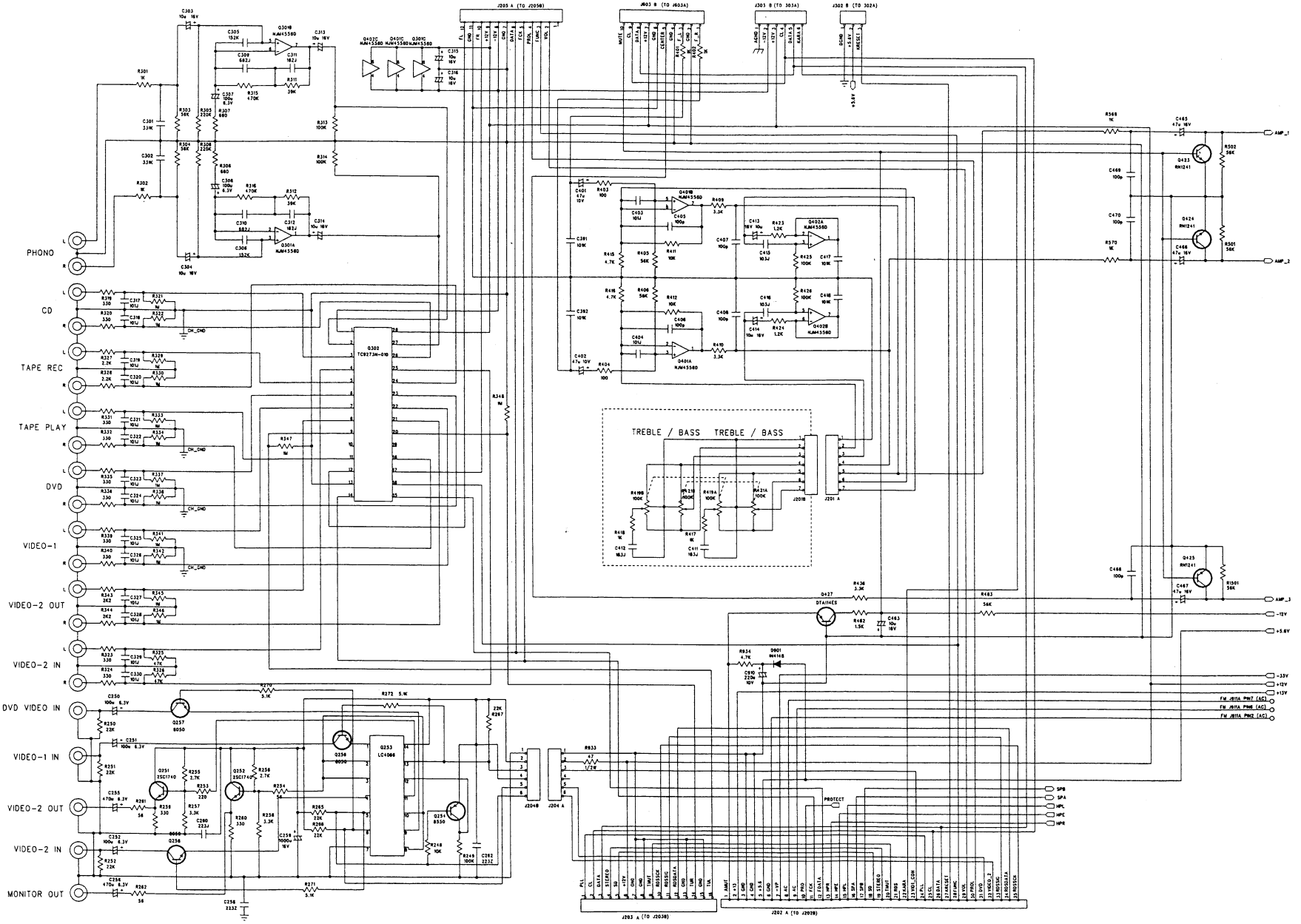
SECTION B
1723-360A-XXXX
SECTION C
1723-360A-XXXX
SECTION A
1723-370A-XXXX
SECTION B
1723-520A-XXXX
SECTION A
1723-380A-XXXX
SECTION E
TRANSFORMER
1723-380A-XXXX
SECTON B
1723-370A-XXXX
SECTION A
1723-380A-XXXX
SECTION C
1723-380A-XXXX
SECTION G
1723-380A-XXXX
SECTION A
1723-370A-XXXX
SECTION C
1723-380A-XXXX
SECTION F
1723-520A-XXXX
SECTION B
1723-360A-XXXX
SECTION D
AC IN
1723-360A-XXXX
SECTION A : MAIN
SECTION B : VIDEO
SECTION C : AUDIO
SECTION D : BASS/TREBLE
SECTION E : -
1723-370A-XXXX
SECTION A : PROLOGIC
SECTION B : SURROUND AMP.
SECTION C : MAIN SWITCH
SECTION D : -
1723-380A-XXXX
SECTION A : DISPLAY
SECTION B : TUNER
SECTION C : SEC. POWER SUPPLY
SECTION D : AC INPUT
SECTION E : PRI. POWER SUPPLY
SECTION F : HEAD PHONE
SECTION G : VOLUME
SECTION H : RI SECTION
1723-520A-XXXX (Q003XC ONLY)
SECTION A : KARAOKE
SECTION B : MIC. INPUT
WITH WAFER/CONNECTOR
W/O WAFER (DIRECT SOLDERING)
PIN 1 OF WIRE (WHITE COLOR)
(?) NO. OF PINS

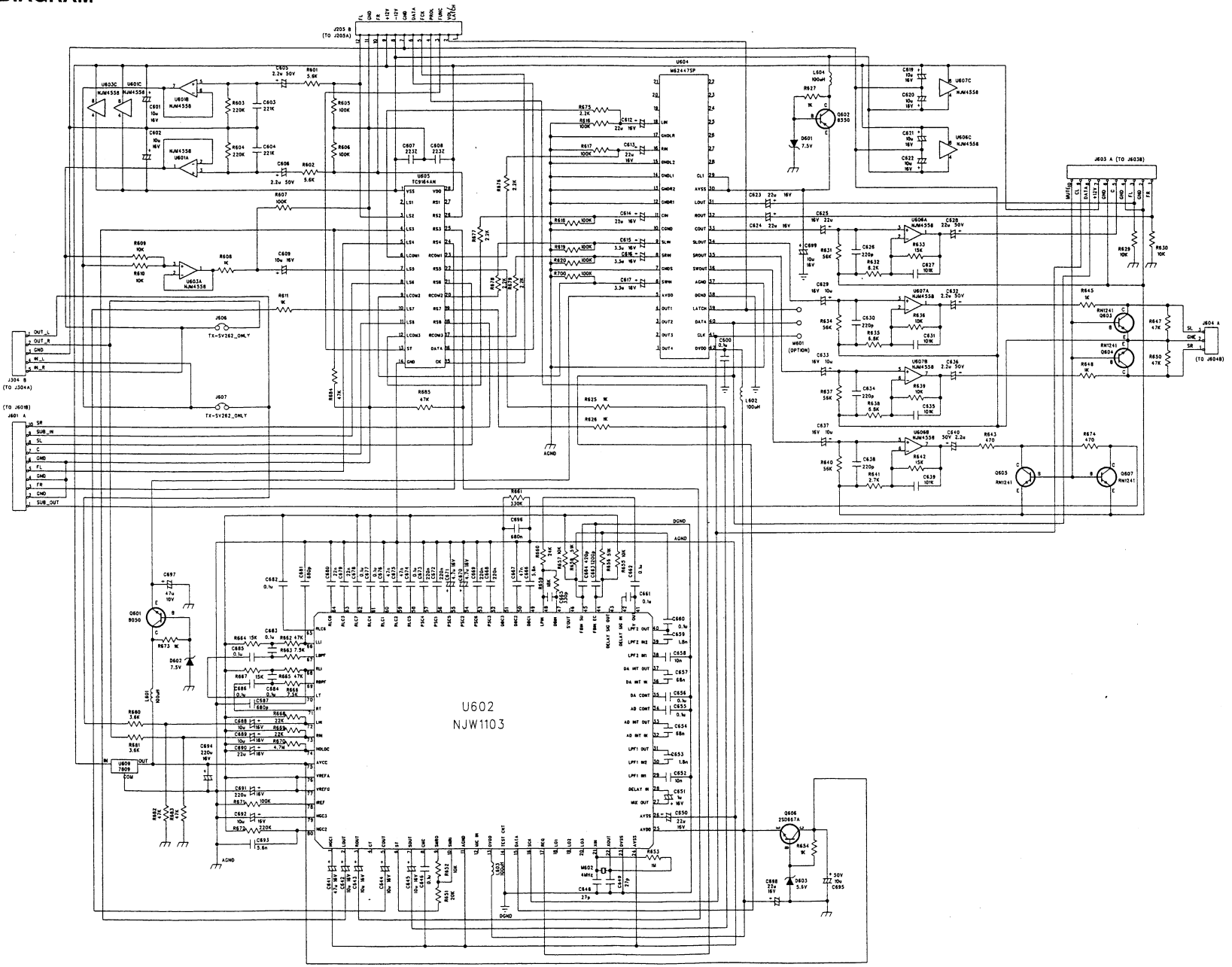
BLOCK DIAGRAM



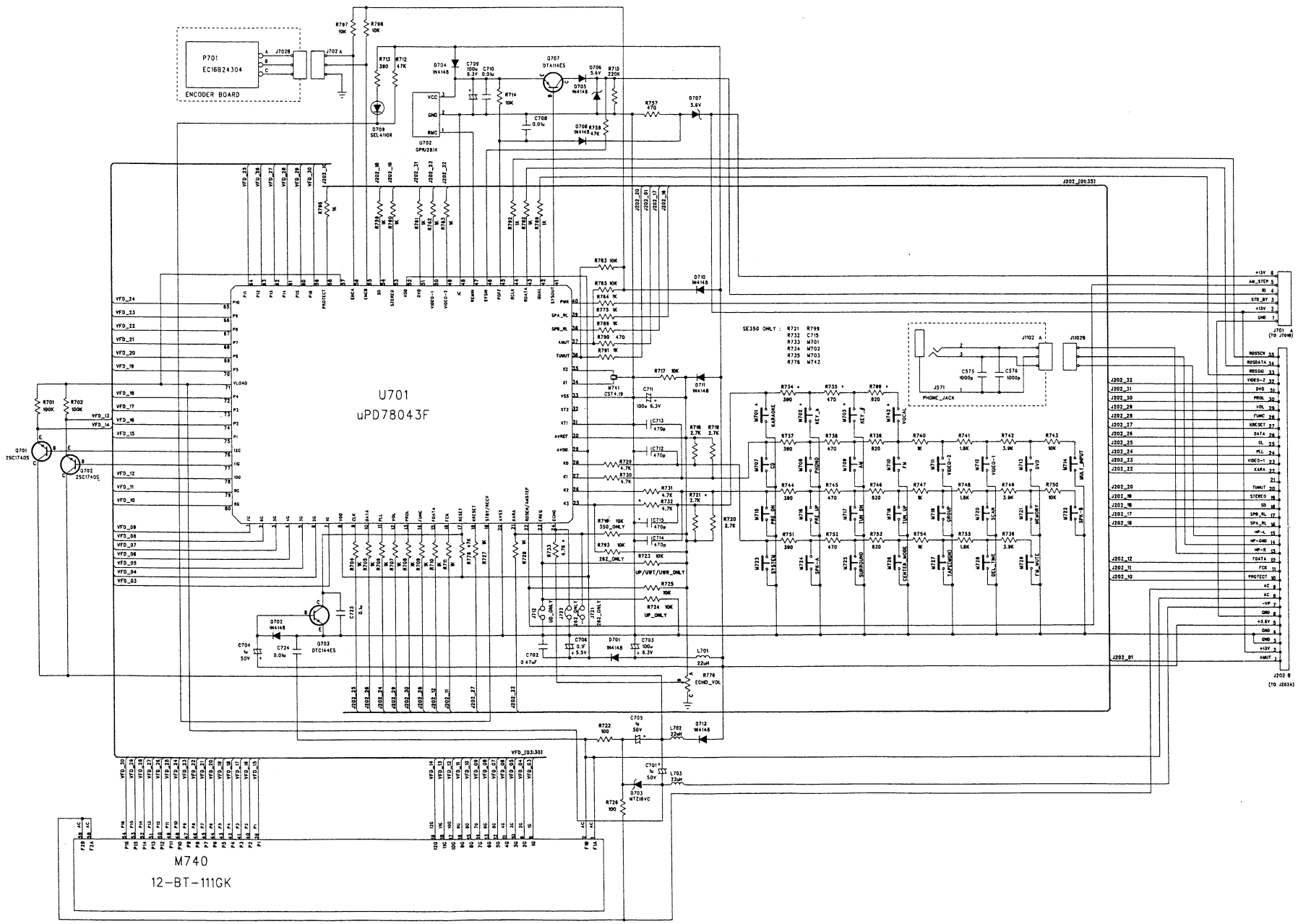
SCHEMATIC DIAGRAM



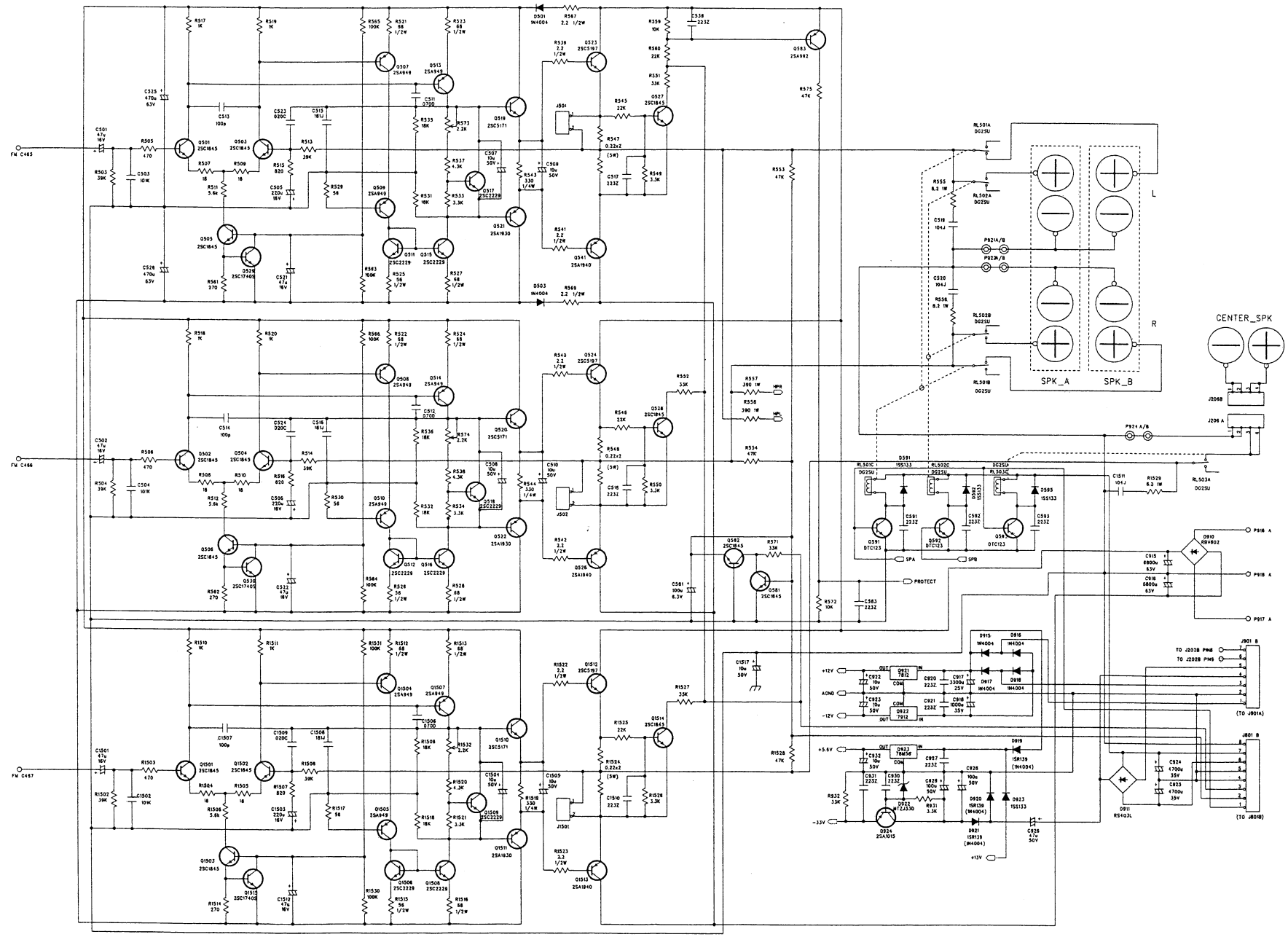
SCHEMATIC DIAGRAM



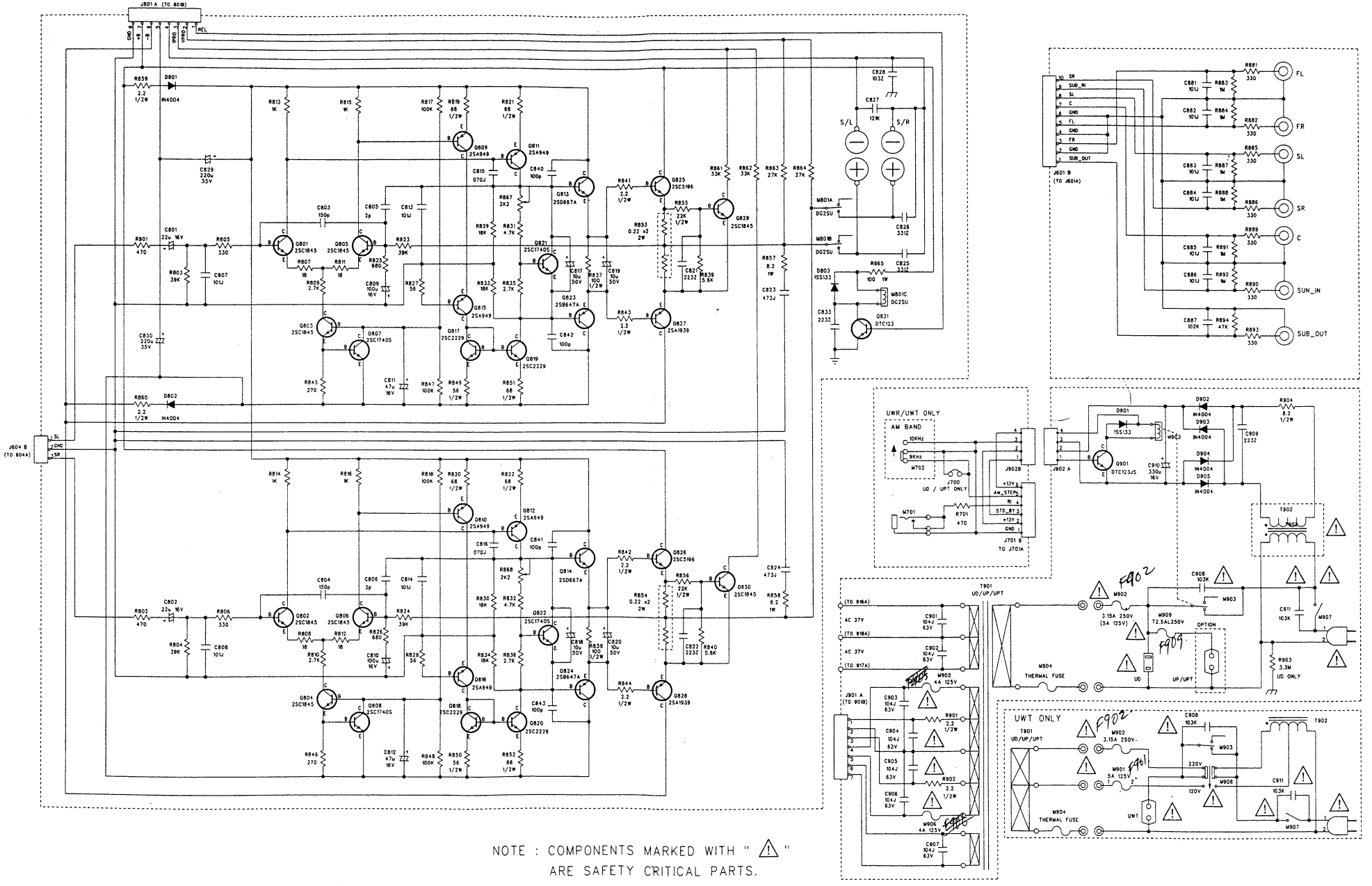
SCHEMATIC DIAGRAM

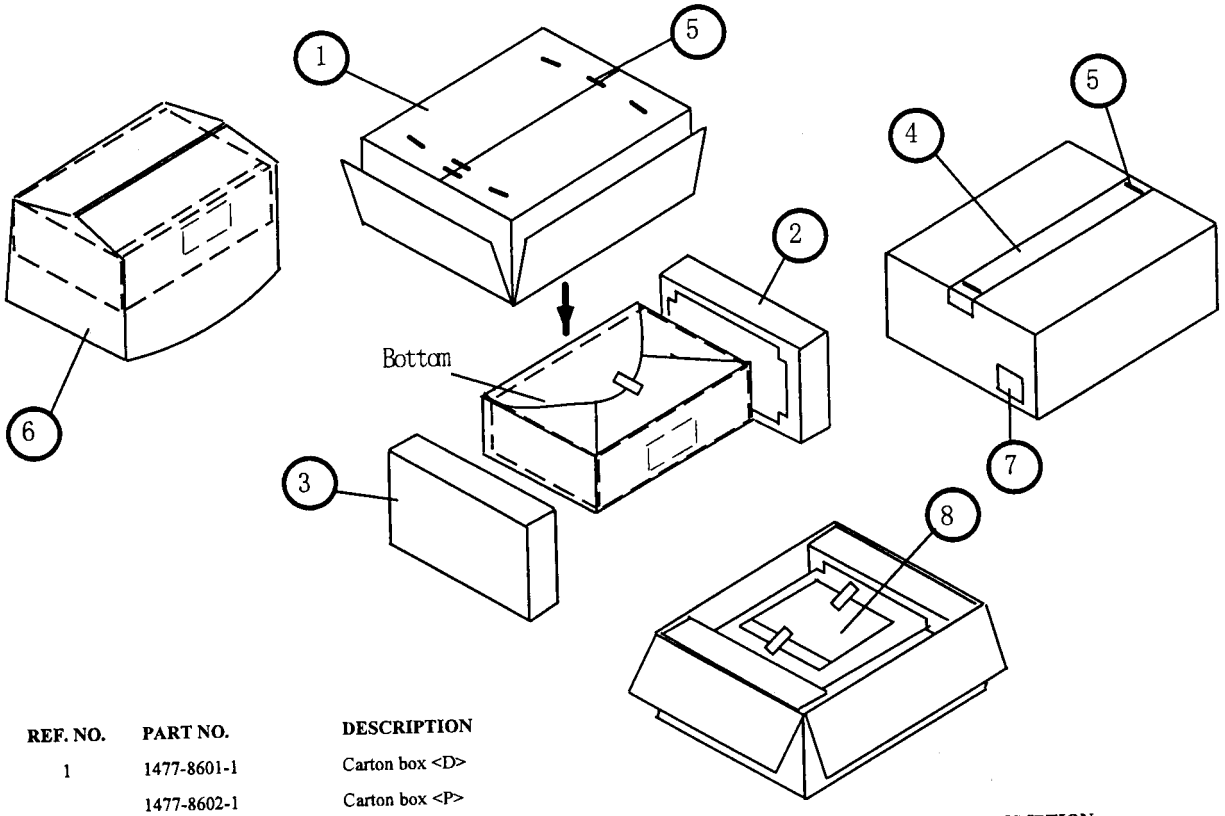


SCHEMATIC DIAGRAM



SCHEMATIC DIAGRAM





REF. NO.	PART NO.	DESCRIPTION
1	1477-8601-1	Carton box <D>
	1477-8602-1	Carton box <P>
	1477-8603-1	Carton box <T/W>
2	1490-5023-0	Pad, left
3	1490-5024-0	Pad, right
4	29110071	PP tape
5	282301	Staple
6	1497-1072-4	Polybag, unit
7	3000-5091-0	Label UPC <D>
	3000-5092-0	Label EAN <P/T/W>

NOTE: <D>:120V model only
<P>:European model only
<T>:Asian model only
<W>:Worldwide model only

REF. NO.	PART NO.	DESCRIPTION
8	1497-1062-0	240X360X0.05, Polybag
	2101-1551-0	Antenna adopter <T>
	2105-3261-0	Conversion plug <T>
	2107-1081-0	Conversion plug <W>
	2113-1155-0	AM loop antenna
	29365019B	Warranty card <D>
	3010054	Battery
	4301-4204-0	Instruction manual E
	4301-4205-0	Instruction manual U3 <P>
	4301-4206-0	Instruction manual U3 <P>
	4301-4207-0	Instruction manual T <T/W>
	7010-1740-0	FM antenna
	8900-1880-0	RC-386SRemote controller

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